

The NFT (Nutrient Film Technique) system



(Challenger Institute of Technology Aquaponics installation)

NFT consists of the plant roots sitting in a thin layer of nutrient water that runs through a PVC pipe. The shallow flow of nutrient water only reaches the bottom of the roots that develop in the trough. The top of the root mass is exposed to the air, therefore the plants receive adequate oxygen supply. Channel slope, length and flow rate must all be calculated to make sure the plants receive sufficient water, oxygen and nutrients. If properly constructed, an NFT system can sustain very high plant densities. In aquaponics NFT systems, a separate biofilter is crucial as there is no large surface area whereby bacteria communities can develop.

Pros and cons of the three systems

- NFT and media beds absorb a lot of heat and transfer it to the water.
- Floating raft systems have a constant flow of water that tends to regulate temperature.
- NFT and raft styles require pre-filtration of solids and additional aeration.
- Grow Beds have a higher volume water return and/or oxygen draw down through the media.
- Grow bed media can move through the system and block pipes.
- NFT and floating raft systems require a separate biofilter as an additional cost.